Version 0.61

Introduction

Mario Advisor was written to render Garmin maps in a java phone, using a memory card as storage. Information about the file format used by these maps (.img) is freely available, that's why there are many resources around the world with custom made maps, most of them compatible with this program.

Valid Maps

Mario advisor supports the Garmin "classical" .img file, either unlocked or locked. It will work with these Garmin products:
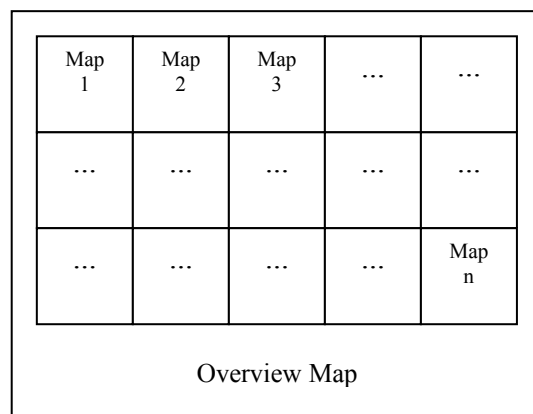
- WorldMap

- Metroguide: Australia, Canada (and discontinued North America, Europe).

- City Navigator: North America, Europe, Australia, Middle East, Southern Africa

Maps compiled with cGPSmapper are valid too.

It won't work with City Navigator NT. NT products use a new and different .img format, not public at the moment. Also unsupported are the charts with several maps compiled into a single file (like the gmapsupp.img stored in GPS receivers).

Normal/Overview Maps

A map set is generally composed by one overview map and several detailed maps. This way, drawing a wide area is done by opening a single file instead of many little maps.

Map 1	Map 2	Map 3	…	…
…	…	…	…	…
…	…	…	…	Map n

Overview Map

Normal maps usually have 3 levels of data:

- Level 0: It's the most detailed. It contains streets, all kind of roads and points of interest.

- Level 1: Composed by small cities, main streets.

- Level 2: Main roads and big cities.

When zooming out, the requested detail level increases. There is a Settings value called "Overview Map Detail" which defines when to switch to overview map (level 3 by default).

Overview map files are easy to find in Garmin map sets. They are a little bigger than the rest, and their name is composed by letters, not numbers.
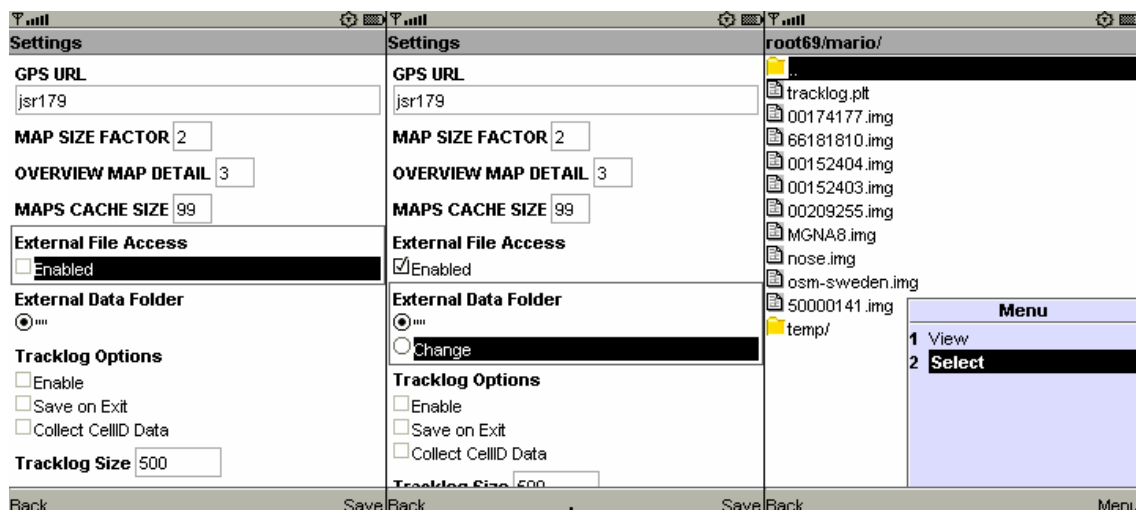
Internal/External Maps

There are two different ways to store map files. External storage in a memory card is the natural way. Old img files where designed to fit minimum space, and a simple 1Gb card may contain hundreds of them. BUT java security system is designed to restrict access to external files if you haven't signed (paid) the midlet. So an annoying prompt will arise any time a file is accessed. Signing Mario Advisor is not an option at the moment. To avoid this confirmation request you can either make a firmware update or installing an extra java certificate like Halmer. A signed version of Mario Advisor signed with Halmer certificate is available in ed2k networks.

The third way to avoid the prompts is to store the map files inside the midlet. Security problems disappear, but the midlet size increases easily and there is a limit of a few Mb, depending on manufacturer and model. Besides, in Sony Ericsson models, reading internal data is extremely slow, only suitable for small/low detailed files.

External maps usage

Just copy img files to a data folder in the memory card, run Mario, go to "Settings" and mark the "External File Access" checkbox. Then select "Change" in "External Data Folder" and select the map directory (only first 255 items are shown in the list).

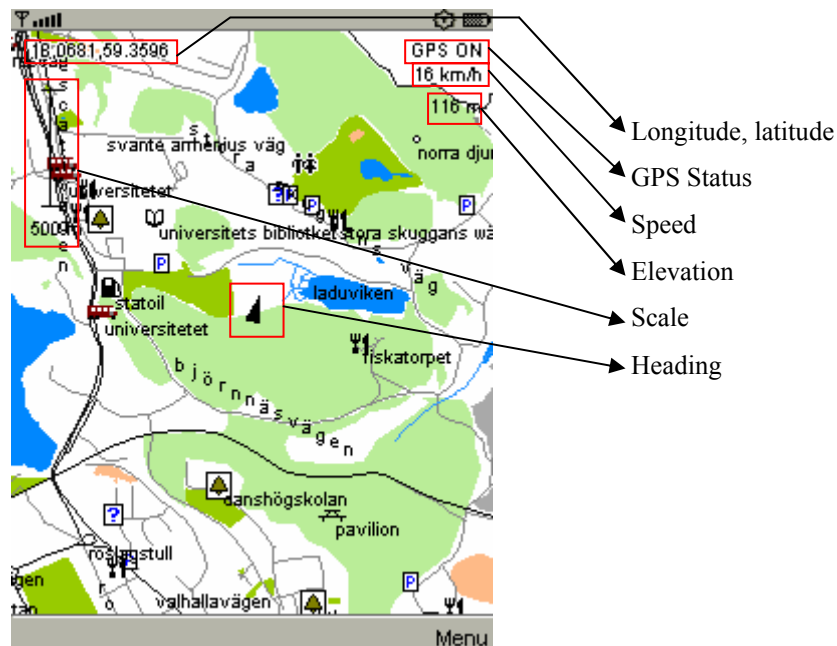Save and restart to use the maps.

Internal maps usage

Open the jar file with a compression tool and add the img files inside the "maps" folder. Then, edit the "map_list.txt" file adding the name of the new files (including .img), one name in every line. The lines must be ended with CR/LF (0d/0a). Many text editors use 0x0a only and this won't work. Windows notepad works fine.

Java Permissions

If you are having trouble with external file access, check midlet permissions, specially "Read User Data". Some mobiles forbid access to unsigned applications by default. Even in some branded phones there is no way to change it.

Map Screen

Appearance

The bottom line is used to display a status line. Possible status: "Generating Map..." means that there is a valid map file for the current coordinates and it is being rendered. "No Map Data Available." is shown when there is not a valid map in the displayed area.

Controls

- Up (2), Down (8), Right (6), Left (4): Panning
- Fire (5), short press: Zoom In
- 0, Fire (5), long press: Zoom Out
- *: Center view in actual position, when GPS is ON
- #: Full label processing On/Off

Label data may appear in two different sections of the map file. The one with basic data (city/region names) is fast to parse, and the other (POI and road names) is a bit slower. That's why full label processing is Off at startup.

Backlight ON/OFF

Backlight control tries to keep the screen illuminated. It has been made to work with Nokia S40, S60 and Sony Ericsson mobiles only, so it may fail with other brands.

GPS

Mario Advisor is able to use either an internal GPS using JSR179 or an external one by means of Bluetooth (JSR82). BT GPS unit must send data using NMEA protocol.

Bluetooth GPS

A device URL is needed to establish a connection. This value is obtained by the BT GPS Finder form.

BT GPS Finder form

Will detect nearby Bluetooth devices. Selecting a device will set "GPS_URL" in Settings.
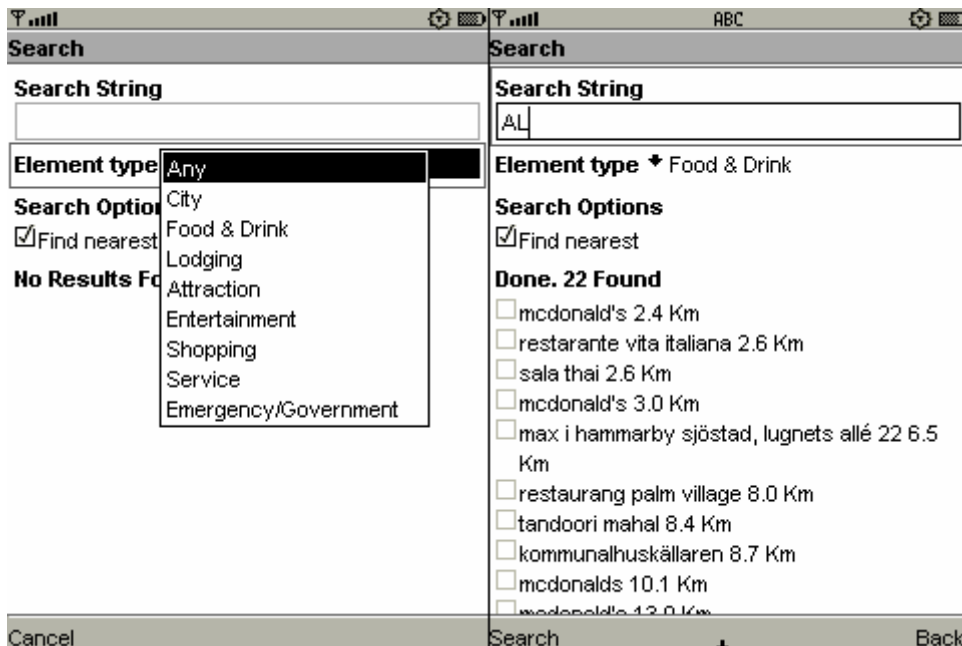
Internal GPS (JSR 179)

If GPS_URL is set to *jsr179*, then internal GPS is used. There are two midlet versions: one supports JSR82+JSR179 and the other only supports JSR82. If you are using an internal GPS, make sure you have the right version.

Search Form

Performs a **point** search. There are three parameters:

- Search String: Letters to find in point's name. Can be left blank.

- Element Type: Category or Any (quite slow).

- Search Options/Find Nearest: When checked, the search is restricted to a <100km radius and results are ordered by distance to actual position. When left unchecked, search is done in all the valid files except general maps, and results are ordered alphabetically (very slow).

Pressing on one item will jump to its position. To avoid crashes (mainly with Sony Ericsson mobiles) only first 255 results are showed in the list.

Maps Info Form

Shows a little info about the maps loaded. Files that couldn't be opened are marked with the label "failed". The rest are completed with its map name. Comment "(g)" means general (overview) map.

Selecting one map will jump to its center coordinates.

Settings Form

GPS URL

Connection string to a Bluetooth GPS, usually selected by the BT GPS Selection form. There are two special values: *jsr179* will select an internal GPS (works only in the midlet with jsr179 support) and *hge100* to select the GPS enabler accessory by Sony Ericsson (needs some testing).

MAP SIZE FACTOR

The map displayed in screen is a bitmap, whose size is wider than the screen. The ratio between the real size and the visible one is the Map Size Factor. That way, the map hasn't to be generated every time we pan. A value of 2 for a 320x240 mobile means the bitmap size is 640x480. Bigger values allow panning a wide area without accessing files, but will be slow to generate and will consume a lot of memory.

OVERVIEW MAP DETAIL

Zoom detail level used to switch to overview map. Usually 3 for Garmin products. Open street Map and topo files may have more zoom levels. In this case, it is recommended to rise. If set to -1, there is no change to overview map. This is useful when working with a few map files.

MAPS CACHE SIZE

Maps cache stores the file structure of the last used maps. This way, the map generation is faster. A low number is preferred for low memory devices (and worse performance), and a big size will increase map generation speed and memory consumption.

External File Access & External Data Folder

See "External maps usage".

Tracklog Options

Mario Advisor may store navigation data sent by GPS device. Registered variables are: longitude, latitude, time, date, speed, elevation and heading. Sony Ericsson mobiles may also store cell-id and lac from current cell.

- Enable: Starts registering data.

- Save on Exit: Creates an Oziexplorer .plt track file with stored data. File name is tracklog.plt. Tracklog file includes extra data with speed and heading.

- Collect CellID Data: When selected, includes cell-id and lac read from the cell. If *Save on Exit* is enabled, it will be present in tracklog file too.

- Tracklog Size: Number of points stored. When the limit is reached, old data is erased.

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